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ABSTRACT

It is argued in this paper that, while newborn infants are ignorant of the the life-ways of the society into which they are born, by age 3 children have become socialized participants of their culture. It is the thesis of the discussion that the rapid development of babies into participants of society is accomplished through a finely tuned combination of the infant's skills and the guidance of more experienced people. First discussed are some of the ways infants quickly pick up great amounts of information regarding the workings of the new environment. Described next are some characteristics of adult/infant interaction that are regarded as well suited to the gradual immersion of infants in the skills and beliefs of the society. Finally, using data from 10 observations of adults interacting with one of two babies during play with a jack-in-a-box, the paper illustrates the argument that infant skills and adult/infant interactional strategies together produce development. (MP)

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INTERACTION WITH BABIES AS GUIDANCE IN DEVELOPMENT

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Newborn infants are quite ignorant regarding the life-ways of the society into which they are born. By age 3, however, children are socialized participants in their culture. It is the thesis of this paper that the rapid development of babies into socialized participants in society is accomplished through a finely tuned combination of the infant's skills and the guidance of more experienced people. We will first discuss some characteristics of infants which seem suited for quickly picking up great amounts of information regarding the workings of their new environment. Then we will describe some characteristics of adult-infant interaction which we regard as well adapted to the gradual immersion of infants in the skills and beliefs of the society. We will illustrate our argument that infant skills and adult-infant interactional strategies together produce development using data from 10 observations of adults interacting with one of two babies during play with a jack-in-a-box.

Children's role in their own development

Infants appear to come equipped with ways of ensuring proximity to more experienced members of society, and of becoming involved with their physical and social surroundings. New babies' cries and smiles have a nearly irresistable pull on adults. The fact that they calm when held rewards adults for keeping them near. That rocking and walking are effective ways of satisfying babies provides them with adult legs to move on and to vary the scene of regard, yielding information about the environment. Before long, babies are

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able to hold on, to cry when a familiar adult departs, and to approach the adult in order to maintain proximity. They grab and explore whatever comes within reach, and one of the caretakers' main jobs is to supervise their access to objects. Babies look to adults for information in ambiguous situations, employing them as a safe base for exploration and using their interpretation of unusual events as a guide for exploration and learning. Anyone who has experienced being isolated in a foreign culture will identify with infants' strategies for learning: Stay close to a trusted guide, watch what the guide does and experiences, participate in the guide's activities, and learn from any instruction the guide provides.

Hay (1980) argues that infants' propensity to seek proximity to their caretakers assists them in acquiring information about the environment and about the activities of the person who is followed. Sorce, Emde, and Klinnert (1981) provide evidence that during times of cognitive uncertainty, one-year-old infants make use of and actively reference their mothers' emotional expression, turning to the mother and attempting to benefit from her appraisal of the situation. If she seems to be interested in and enjoying a situation, the infant proceeds to approach and explore. If the mother signals fear or anger, the infant terminates exploration or avoids the situation.

Such referencing is facilitated by the ability which appears by age 12 months to obtain information from the direction in which caregivers point and gaze (Butterworth & Cochran, 1980; Lempers 1979). In fact, children are so good at obtaining information from glances, winces, and mood that one of the greatest challenges of testing preschoolers is to avoid nonverbal actions that may be construed as cues. Mehan (1976) has observed children pressing for and

using such cues when given standardized intelligence tests by strangers.

The extent of children's active effort in arranging to learn things is also evident in their sometimes obnoxious presence at the scene of activity. Parents often find their toddlers or preschoolers in the way or insisting on "helping" in ongoing activity. The parent may be more concerned with getting the dishes clean or the gift wrapped than with instructing the child in the principles of soap and water or the geometry of fitting paper around a gift. The child's insistence on involvement, however, is likely to be instrumental in gaining a greater understanding of such principles.

We suggest that many of the characteristics of infants and young children are well suited to putting them in a position to seek information about the world around them, as construed by their caretakers. They are thus active participants in arranging their own development.

Features of adult-infant interaction through which development is arranged

Adults arrange for children's learning through both 1) their arrangements of appropriate sequencing of materials and tasks for the child, and 2) the information and skills transmitted to the child as the adult and child participate together in an activity. Adults provide access to activities, adjust the child's participation to an appropriate level, and modify the child's responsibility as expertise grows. We will elaborate on these points before illustrating the ideas with data.

Our perspective on adult-child interaction as guidance in development has been influenced by the work of Vygotsky, the Laboratory of Comparative Human Cognition, Wertsch and his colleagues, and Bruner, Wood, and their colleagues. Vygotsky (1962, 1978) emphasized that the social context is instrumental in guiding cognitive development (1) through the provision of

culturally developed tools and practices such as calculators, writing systems, and event scripts which facilitate and channel cognitive activities, and (2) in social interaction with more experienced members of society in which information regarding tools and practices is transmitted in the "zone of proximal development". In engaging the child in an appropriate solution to the problem, the adult creates a "scaffolded" (i.e., supported) situation in which a child can extend current skills and knowledge to a higher level of competence (Vygotsky, 1978; Wertsch, 1979; Wood, 1980).

During communication in the zone of proximal development, the adult assesses the child's current understanding of the material and adjusts the scaffolding to support the child's developing skill, while the child simultaneously adjusts the pace of instruction and guides the adult in constructing the scaffold. The child is actively involved in the solution of the problem. The adult does not simply solve the problem and report the solution, nor does the child passively observe the adult in the process of solving the problem and extract the information spontaneously. In effective use of the zone of proximal development, the adult leads the child through the process of solving the problem, with the child participating at a comfortable but slightly challenging level.

The adult's role in guiding the child's participation in problem-solving does not necessarily involve awareness of instructing on the part of the adult. The arrangement of learning often involves tacit and opportunistic use of the available resources in a particular problem situation, rather than explicit recipes for problem solution that do not rely on joint participation in the activity. An adult marks crucial actions, provides guidance at choice points, and indicates important alternatives in the solution of the problem at

hand. Information and skills are conveyed through the shared construction of the solution rather than through explicit free-standing directions for how to solve such a problem.

It is in infancy that the tacit nature of instruction may be clearest, since few adults regard themselves as "teaching" the infant, but they routinely adjust their interaction and structure the child's environment in ways consistent with providing support for the child's learning. Researchers in prelinguistic development have noted that adults carry on conversations with their infants in which the baby's role as conversational partner is adjusted to the baby's repertoire (Brown, 1958; Bruner, 1981; Bernstein, 1981; Cazden, 1979). Adults' turns support the babies' participation by providing responses to their own questions, by repeating and expanding upon infants' contributions, and by providing visual supports and redundant information to aid infants' learning. Infants' conversational turns first involve coos and burps, later involve babbling, and eventually require speaking words. As babies' repertoires increase, adults continually "up the ante", holding out for the most advanced form of participation from their partners. The structure of adult-child discourse allows children to participate in conversations that are beyond (and potentially lead) their competence in discourse.

The tacit arrangement of young children's learning by adults is also evident in adults' selection of appropriate tasks and materials for children's current state of understanding, even without face-to-face interaction. Adults play a large role in determining what objects (e.g., toys, books) are available, what spectacles (e.g., television shows, birth of a sibling) are allowed, what chores the child is involved in, what companions are available,

what access the child has to observing the parents' work and recreational activities. Providing access to these activities is instrumental in the child's learning, though adults may seldom regard this role as instructional.

In addition to providing access to activities and thereby arranging the occurrence of cognitive tasks, adults facilitate children's learning by regulating the difficulty of the task. For example, parents regulate the task of learning to cook on the basis of the child's skills, the parents' interest in the child learning those skills, and pragmatic factors such as cleanliness or time pressure in preparing breakfast. A child may be allowed to stir the eggs at age 2, to break them at age 3, to dish them up at age 4, and to turn the stove on at age 5.

To regulate the difficulty of the task, the adult segments the task into manageable subgoals. This role is apparent in the adult's decisions regarding what level of activity a child may participate in, even when the adult is not constantly interacting with the child in the performance of the activity. It is also apparent in interactional situations, where the level of the adult's involvement is tailored to the child's expertise; with a novice, the adult may take responsibility for managing the subgoals as well as the overall goal of the activity, while with a more experienced child, the adult may give responsibility for subgoals to the child.

While the adult may initially take responsibility for structuring the task and managing progress toward the goal, the division of responsibility changes over the course of instruction as the child gains expertise. An important aspect of structuring the task is to assure the appropriate transfer of responsibility to the child for managing the activity. This requires sensitivity to the child's competence in the particular task, and may involve

a tacit theory of development and task analysis. The transfer of responsibility may be a subtle process involving successive attempts by the participants to assay the novice's readiness for greater responsibility and negotiations of the division of labor. Over the course of learning, the highly supportive scaffolding is interactively removed so that the child is participating at an optimally responsible level.

One way in which scaffolding may be provided is to make messages sufficiently redundant so that if a child does not understand one aspect of the communication, other forms are available to make the meaning clear. As the child develops greater understanding, the adult and child adjust the level of scaffolding necessary to support the child's learning by reducing the level of redundancy. Greenfield (in press) argues that in early parent-child communication, the adult facilitates the infant's language acquisition by supporting a verbal message with enough redundant nonverbal information to ensure the infant's understanding. As the infant becomes able to comprehend the verbal message, the adult decreases the nonverbal information. Adults may test the child's 'readiness' by reducing the level of scaffolding and thereby allowing the child to participate to a greater extent. But if the child indicates lack of understanding, the adult may quickly and subtly re-erect the scaffolding which had been momentarily removed. This testing frequently utilizes very subtle cues such as hesitance, direction of gaze, and postural changes, as well as errors on the part of the child.

It should be emphasized that the social guidance of development is jointly arranged by the participants. Both adult and child are responsible for structuring and pacing the instructional communication and learning activities. They jointly manage the transfer of responsibility for the task,

adjusting the support for the child's performance to a level just beyond that which the child could independently manage, as the child's capabilities develop.

Guided development as adults and babies play with a toy

We will illustrate our arguments regarding the arrangement of development through guided participation in an activity with the adult and baby coordinating responsibility for structuring and pacing the interaction, using observations of adults interacting with babies from 4 to 12 months of age. The data are taken from a random sample of 10 of 22 adults who interacted with one of two babies: a twin sister and brother. The adults include 6 men and 4 women, aged 18 to 77 years. Five of the adults were strangers to the babies, 4 were acquaintances and 1 was related. Half of the 10 sessions involve the girl baby, and half involve the boy. The sessions occurred in the babies' home, with their mother present. The adult was told that we were interested in how adults get babies to do things at different ages, and was asked to try to get the baby to "talk and smile and play with toys". Among the 11 toys available was a jack-in-a-box. If the adult did not spontaneously use the jack-in-a-box during the 5 - 10 minute session, the mother suggested that they try it. The data we present here are based on the episodes involving the jack-in-a-box for the 10 adults chosen. Of these, 2 did not produce any data due to lack of interest from the babies.

The data are in the form of transcripts describing the sequence of adults' and baby's communicative actions: their vocalizations and intonations, postural changes, gaze, gestures, and actions with objects. Transcriptions made independently by two observers viewing the same videotaped segment indicated great congruence in the accounts produced by different

observers. It is interesting to note that this congruence did not require extensive training and involved observers of different cultures (Anglo, Navajo, and Polish) with varying familiarity with the research topic (undergraduate, graduate student, faculty member).

The interactions in the early months (4-6 months) focus on the maintenance of attention to the adult and to the ongoing activity, through subtle negotiations. The baby rewards the adult with eye contact, smiles, and cooperation when the adult successfully meshes the adult's and baby's agendas, and is sensitive to the baby's cues. The baby withdraws eye contact when the adult appears to be too intrusive, uninvolved, or oblivious to the baby's cues. The longer the adult persists in missing the baby's cues, the more the baby escalates them -- beginning with listlessness, then gaze aversion, then postural distancing culminating in turning away the whole body and hiding the face in the forearms. Each step reflects the adult's moves. Contingent upon the baby's involvement, the adult withdraws access to a toy or discontinues an activity when the baby appears to have lost attention to the adult or the adult's agenda. At the older ages (9 to 12 months), the maintenance of joint attention seems to be more clearly established, and the focus appears to involve negotiations over what game is being played, according to what script. Again, the participants interpret eye contact, posture, and grasp of objects in interpersonal terms.

The jack-in-a-box offered a problem-solving situation to the adults and the older babies, which was: How and at what level to get the baby to participate in the means-end behaviors of winding the handle to get the jack-in-a-box (really Bugs Bunny in a box) to pop out, and then getting the bunny back in. The adult and baby participated jointly in managing the handle

or getting the bunny back in during most of the interactions after 5-1/2 months (5-1/2 mo, 6 mo?, 6-1/2 mo, 9 mo, 9-1/2 mo, 12 mo).

The adult managed the child's involvement with the toy even at the early ages. Some tried to avoid using the toy or letting it pop open, thinking that it might scare the baby (5-1/2 months, 6 months). One kept the bunny from abruptly popping out by holding a hand over the lid and then letting the lid up gradually (6-1/2 months). Some tried to provide the baby with a warning that something was about to happen (6 mo, 6-1/2 mo, 9 mo), or after the bunny popped out provided the baby with an interpretation of the event as a funny or surprising one (4 mo, 5-1/2 mo, 6 mo?, 6-1/2 mo, 9 mo, 9-1/2 mo, 12 mo). They made sure that their face was visible to the child and made an exaggerated laugh or commented "isn't that funny?" It is interesting to note that the babies never reacted with fright and seldom with surprise to the bunny popping out. It appears that the adults' precautions may have been based on their preconceptions rather than accurate predictions of these particular babies. In the following paragraphs we will summarize a selection of the interactions from 4 months up to 12 months, to illustrate the progression in adult-infant coordination of the activity.

Even with a baby as young as 4 months, the adult focused the baby's attention on the surprising sudden appearance of the bunny by jumping as if he were scared. He elicited mutual gaze asking, "Did you see that?" as confirmation of the baby's attention to this focus. While the interaction was short-lived, it did involve mutual focus of attention.

By age 6-1/2 months, at least one baby seemed to understand some aspects of the script for playing with the jack-in-a-box: she reached for the box with one hand and the crank with the other. The adult attempted to provide further

guidance in its use by trying to involve her in turning the handle and by giving an interpretation (excited surprise) of the bunny popping out.

With a baby of 9 months, an adult guided the baby's understanding of the jack-in-a-box by warning the baby of the impending pop-up, interpreting the event with exaggerated surprise and excitement, and explicitly instructing the baby on the connection between the turning handle and the pop-up. The baby seemed to show some understanding of the procedure and sought further information with questioning looks. The baby was also active in choosing to play with the toy again, influencing the activity over which he and the adult interacted. In this interaction, there were 5 episodes of making the bunny pop out. Episodes 2, 4, and 5 give the flavor of the interaction.

(Episode # 2) After playing with another toy, the baby catches sight of the jack-in-the-box again, and leans on it pushing it toward the adult. The adult whispers, "What?" and the baby pats the top of the box. It appears that the baby has chosen which toy to play with, as the adult responds to his patting of the box, "Should we make Jack come out again?" The adult begins to turn the handle as the baby pats the top of the box four times. The adult says "Here he comes" with anticipation, and turns the handle faster. The baby stops patting the box, with his hand held in mid-air as he watches the box and the adult's hand with great anticipation. "Here he comes!" warns the adult again, and the bunny pops up. The adult exclaims "Oop!", the baby blinks,the adult laughs heartily, the baby looks at the adult, the adult exclaims, "He came out <u>again</u>," and the baby smiles and then looks at the bunny....

(Episode # 4) After playing with some other objects, the baby notices the jack-in-a-box again. He reaches to grab the box but stops in mid-reach, and watches with great interest as the adult begins to turn the handle. The adult slows down the turning of the handle until it is moving <u>very</u> slowly. She explains, 'And that makes him come out." The baby looks at the adult, seeming to notice the slowed turning of the handle, looking at her with wide eyes and a questioning look, seeming to seek information. The adult nods and confirms, "Yeah" and the baby quickly looks back to the handle as the adult

explains, "That makes him come out." Just before the bunny pops up, the baby shifts his glance from the handle to the top of the box. At the pop-up the adult squeals "Oooo!" but the baby looks intently at the bunny without any sign of surprise, and reaches for it, smiling.

(Episode # 5) The adult struggles to get the baby's hand off the bunny to push the bunny back in the box, pulls the box out of the baby's lap and turns it around, suggesting, "Shall we turn it?" The baby pats the box, and the adult clarifies, "Do you want to turn it?" pointing to the handle. The baby grasps the corner of the box and pulls it to his side, then becomes distracted.... The adult attempts a new game involving the mouse puppet, but the baby fidgets and whines. The baby tries to pull the jack-in-a-box toward himself, fumbling and whining. The adult watches him and asks, "Want Bugs to come out again?" When she tries to turn the box around with the baby's hand still on it, the baby whines more and pulls away from the box. The adult moves the box and the baby grabs the box again, whining louder. The adult begins to turn the handle while the baby raises his hands over his head in frustration and fatigue; but he stops in mid-air as the music begins and stares at the handle turning. The adult asks sympathetically, "Is that what you wanted?" as she continues to turn the handle. The baby stares at the handle and lets out a big sigh of relief. As the music plays, the adult asks, "Ready?" and strategically slows down the music. The baby looks at the adult questioningly. When the bunny pops up, the baby blinks and looks at the bunny, and the adult exclaims "Up! There he is!" as the baby reaches for the bunny. The adult repeats, "There he is!" and then the baby looks at the adult, who asks "Is that what you wanted? Did you want Bugs to come out?" The baby continues looking at the adult and grabs the bunny, pulls the box toward him and turns his attention to it, now calm.

During this interaction, the baby seems to have been determined to play with the bunny since the time the adult struggled to put it back in the box, not settling for her attempts to interest him in other games. The baby was active in choosing the toy and seeking participation in its use; the adult provided abundant (though apparently unnecessary) information regarding what was about to happen before the bunny popped out and an interpretation of the

event as an enjoyable surprise after the bunny popped out; the baby showed some understanding of how the toy works and the adult attempted to stretch this understanding through her demonstration and explanation of the connection between the winding handle and the popping bunny.

At age 12 months, an adult and one of the babies demonstrated considerable meshing of communication in their development of a joint script for managing turning the handle and putting the bunny back. The adult coached and encouraged the baby's participation, and they negotiated the level of participation of the baby. By the end of the interaction, the baby showed extensive knowledge of how to work the toy and how to fit actions together with the adult in this particular script.

In episode 1, the adult performs the entire sequence of actions, turning the crank, pushing the bunny back in after he pops out, and closing the box, while the baby concentrates solemnly on the actions, frozen in his absorption.

(Episode 2) The adult cranks the handle and the baby watches the adult's actions with the jack-in-a-box. The adult watches the baby and stops cranking, cranks another 2 notes, stops again, and leans forward and touches his finger to the baby's chest, saying "Poke" as if to lighten up the baby's sober intent concentration. The baby begins to reach for the jack-in-a-box, as if the poke did indeed release him. The adult pokes again, "Poke" and the baby puts his hand on top of the box, with a small smile. The adult squeaks, "Watch the fingers," moves the baby's hand off the top of the box, and cranks 2 more notes. The baby watches the bunny spring up, and the adult comments "Booooinnngg!", throwing his hands up into the air, then down and slapping his thighs. The baby reaches for the bunny's head, smiling, and pushes down as if trying to get the bunny back in the box. The baby continues pushing the bunny's head down, but it bends forward outside of the box rather than into the box. The adult comes to the baby's assistance, saying "Let's stick that little rascal back <u>in</u> there!" and sliding the bunny out of the baby's hand. The baby keeps his hand poised in the air and watches attentively as the adult pushes the bunny into the box, commenting "Here we go". Then the adult says,

"Okay. Here." and pushes the box closer to the baby with the lid still slightly open. The baby puts his hand on top of the box, and the adult says in a gentle, encouraging voice, "Close it up." The baby pushes down on the lid with his hand, and then the adult pushes down on the lid, saying "close it up". The adult then pushes down on the baby's hand on the lid while continuing to push the lid down with his free hand as well....

(Episode 3) The baby reaches up and holds onto the box with one hand and reaches for the crank with the other hand, as if he knows exactly what to do. The adult watches the baby and steadies the box with his hand. The baby jerks the crank slightly, and the adult comments "That's it" and reaches for the crank as if to help the baby turn it. The baby is intently looking at the crank and continues trying to turn it, while the adult encourages him, "That's it", holding the baby's hand on the crank for 2 notes, "Here ya go". The baby pulls his cranking hand out of the adult's grasp but keeps his other hand on the box, watching intently as the adult turns the crank. The baby focuses on the lid of the box as if in anticipation of the lid opening, as the adult continues cranking. When the bunny springs out, the baby blinks and looks at its head, and the adult exclaims "Booinngg!" throwing his arms out to the sides and bobbing his head like a jack-in-a-box. The baby reaches for the bunny's head with a slight smile, and pushes the bunny down. The adult leans forward with a slight smile, whispers "here ya go, put it back in" as he pushes the bunny down and the baby rests both hands on the top of the box and watches attentively. The baby reaches for the lid to help close it, and the adult closes the lid firmly.

(Episode 4) The adult slaps the closed lid rapidly 5 times, and the baby looks at the crank and reaches for it. The adult slaps the sides of the box 3 times, reaches for the baby's hand on the crank, and helps the baby turn the crank slowly, "That's it." They crank together for one rotation, and the adult exclaims with excitement, "That's it!" The baby gently pulls his hand off the crank and watches the adult crank faster and faster. The baby grabs the box on its sides and shoves it back and forth on the tray, and the adult pauses in cranking. The baby looks at the crank and slowly reaches for it, as if he had been demanding a turn. The adult says, "Okay now, you do it" putting the baby's hand on the crank and turning the crank. The baby again

pulls his hand away and watches the adult's hand on the crank, giving the impression that he wanted to do it alone. The adult cranks 4 notes very slowly, the baby grips the top of the box with one hand and reaches for the crank with the other. The adult turns one more note of music, and the baby grasps the crank. The adult takes his hand off the crank, and the baby pulls the crank back and forth. The adult encourages "That's it...that's it," and holds the baby's hand on the crank and turns it 1 revolution. The baby seems to lose interest and looks away but his hand is still held on the crank by the adult. The adult turns the crank 1-1/2 more revolutions and the box springs open, and the adult releases the baby's hand and the crank. The baby looks at the bunny with a smile, and the adult exclaims "Biiinnnggg!" and bobs his head. The baby reaches for the bunny and pushes him down and the adult exclaims "You did it!" The baby reaches for the lid, lowers it, and closes it, demonstrating knowledge of the script. The adult helps the baby snap the lid shut, saying "let's close it up"....

Summary

We have argued that cognitive development is fostered by the arrangements which adults make for children's learning environments, and by the learner's guided participation in an activity. The adult structures the activity so that the overall goal is met through appropriate segmentation into manageable subgoals, and helps the child to progress toward the goal and complete the subgoals at a level appropriate to the child's skill. This social guidance of learning and development is often managed tacitly, without the participants focusing on instruction as a major aspect of the activity, but the structure of the interaction facilitates learning by the child. The guidance provided by the adult may not even involve direct interaction between adult and child; adults are instrumental in choosing the objects with which children work and play, their companions in learning and exploration, and the circumstances of their participation in activities.

The process of guided participation involves joint responsibility by the

adult and the child for the structuring and pacing of the instruction. Over the course of learning, the child's participation changes as a function of becoming capable of handling some components of the task. Together the adult and the child calibrate the appropriate level of participation by the child, where the child is comfortably challenged. Children play an active role in their own development, putting themselves in a position to observe what's going on, involving themselves with the ongoing activity, influencing the activities they participate in, and demanding some involvement with the adults who are their guides for socialization into the culture they are learning.

These aspects of social guidance of learning are what we believe may be responsible, on a day-to-day basis, for the rapid progress of children in becoming socialized participants in the intellectual and social aspects of their society.

References

Bernstein, L. E. Language as a product of dialogue. Discourse Processes, 1981, 4, 117-147.

Brown, R. Words and things. New York: Free Press, 1958.

Bruner, J. S. Intention in the structure of action and interaction. In L. P. Lipsitt (Ed.), Advances in Infancy Research (Vol. 1). Norwood, NJ: Ablex, 1981.

Butterworth, G., & Cochran, G. Towards a mechanism of joint visual attention in human infancy. International Journal of Behavior Development, 1980, 3, 253-272.

Cazden, C. Peekaboo as an instructional model: Discourse development at home and at school. In Papers and reports on child language development, No. 17. Stanford University, Department of Linguistics, 1979.

Hay, D. F. Multiple functions of proximity seeking in infancy. Child Development, 1980, 51, 636-645.

Lempers, J. D. Young children's production and comprehension of nonverbal deictic behaviors. Journal of Genetic psychology, 1979, 135, 93-102.

Mehan, H. Assessing children's school performance. In J. Beck, C. Jenks, N. Keddie, & M. F. D. Young (Eds.), Worlds apart. London: Collier Macmillan, 1976.

Sorce, J. F., Emde, R. N., & Klinnert, M. Maternal emotional signaling: Its effect on the visual cliff behavior of one-year-olds. Unpublished manuscript, 1981.

Vygotsky, L. S. Thought and language. Cambridge, MA: M.I.T. Press, 1962.

Vygotsky, L. S. Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press, 1978.

Wertsch, J. V. From social interaction to higher psychological processes. Human Development, 1979, 22, 1-22.

Wood, D. J. Teaching the young child: Some relationships between social interaction, language, and thought. In D. R. Olson (Ed.), The social foundations of language and thought. New York: Norton, 1980.

Footnotes

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